CLAIMS

1. A composition based on zirconium oxide and cerium oxide with a zirconium oxide proportion of at least 50% by weight, characterized in that it has a maximum reducibility temperature of at most 500°C and a specific surface area of at least 40 m^2/g after calcination for 6 hours at 500°C and in that it is in the form of a tetragonal phase.

2. The composition as claimed in claim 1, characterized in that it furthermore includes at least one other element chosen from lanthanides other than cerium.

3. The composition as claimed in claim 2, characterized in that it includes at least one lanthanide chosen from lanthanum, neodymium and praseodymium.

4. The composition as claimed in one of the preceding claims, characterized in that it has a zirconium oxide content of at least 65% by weight.

5. The composition as claimed in one of the preceding claims, characterized in that it has a maximum reducibility temperature of at most 480°C, more particularly at most 400°C.

6. The composition as claimed in one of the preceding claims, characterized in that it has a specific surface area of at least 70 m^2/g, more particularly at least 80 m^2/g, after calcination at 500°C for 6 hours.

7. The composition as claimed in one of the preceding claims, characterized in that it has a specific surface area of at least 30 m^2/g after calcination at 900°C for 6 hours.

8. The composition as claimed in one of the preceding claims, characterized in that it has a specific surface area of at least 45 m^2/g after calcination at 900°C for 6 hours.

9. The composition as claimed in one of the preceding claims, characterized in that it has a specific surface area of at least 25 m^2/g after calcination at 1000°C for 6 hours.

10. The composition as claimed in one of the preceding claims, characterized in that it is in the form of a solid solution of cerium, optionally with the other aforementioned element, in zirconium oxide.

11. A method of preparing a composition as claimed in one of the preceding claims, characterized in that it comprises the following steps:

- (a) a mixture comprising a zirconium compound, a cerium compound and, optionally, a compound of an aforementioned element is formed;
- (b) said mixture is brought into contact with a basic compound, by means of which a precipitate is obtained;
- (c) said precipitate is heated in aqueous medium; then
- (d) either firstly an additive, chosen from anionic surfactants, nonionic surfactants, polyethylene glycols, carboxylic acids and their salts, and surfactants of the carboxymethylated fatty alcohol ethoxylate type in the medium resulting from the previous step, is added and then said precipitate is possibly separated;
- (d') or said precipitate is firstly separated and then said additive is added to the precipitate;

- (e) the precipitate obtained in the previous step is subjected to a milling operation; and
- (f) the precipitate thus obtained is calcined.

12. The method as claimed in claim 11, characterized in that the precipitate is calcined either in an oxidizing atmosphere or firstly in an inert gas and then secondly in an oxidizing atmosphere.

13. The method as claimed in claim 11 or 12, characterized in that, as zirconium compound, cerium compound and compound of the aforementioned element, a compound chosen from nitrates, acetates, chlorides and ceric ammonium nitrates is used.

14. The method as claimed in one of claims 11 to 13, characterized in that a sol is used as zirconium or cerium compound.

15. The method as claimed in one of claims 11 to 14, characterized in that, in the mixture of step (a), a cerium compound is used in which cerium is in the Ce(III) form and an oxidizing agent is added during step (a) or during step (b), especially at the end of the latter step.

16. The method as claimed in one of claims 11 to 15, characterized in that the aforementioned mixture is brought into contact with a basic compound during step (b) by introducing said mixture into a solution of this basic compound.

17. The method as claimed in one of claims 11 to 16, characterized in that the precipitate is heated in step (c) to a temperature of at least 100°C.

18. The method as claimed in one of claims 11 to 17, characterized in that a wet milling operation is carried out.

19. The method as claimed in one of claims 11 to 17, characterized in that the milling is carried out by subjecting a suspension of the precipitate to a shearing action.

20. A catalytic system, characterized in that it comprises a composition as claimed in one of claims 1 to 10.

21. A method of treating the exhaust gases of internal combustion engines, characterized in that a catalytic system as claimed in claim 20 or a composition as claimed in one of claims 1 to 10 is used as catalyst.